

Pulley Activity
Honors Physics

20 Points Total

Instructions:

1. Place the string over one of the top wheels with the hanging mass on one end of the string and a spring scale (5 N or less) tied to the other end of the string.
2. Calculate the weight of the hanging mass, and record this weight (in N) in the F_r column.
3. Pull the spring scale to raise the hanging mass a distance of 30 cm, and record the effort force and effort distance. The effort distance will be distance you pulled on the spring scale to move the hanging mass 30 cm.
4. Run the string through a second pulley, and repeat pulling the hanging mass 30 cm.
5. After completing the data, stop and wait for further instructions.

# Pulleys	F_e	d_e	F_r	d_r (cm)	IMA	AMA	Eff.
1				30			
2				30			
3				30			
4				30			
5				30			
6				30			

Questions:

1. How does the effort force change as the number of pulleys is increased?
2. How does the effort distance change as the number of pulleys is increased?
3. How does the IMA change as the number of pulleys is increased?
4. How does the AMA change as the number of pulleys is increased?
5. How does the efficiency change as the number of pulleys is increased?